

# MATELECT DCM-2 DCPD CRACK GROWTH MONITOR

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## DCM-2 FEATURES

- Capable of reverse DCPD.
- Advanced filtering options. The unit has highly advanced sampling and filtering options please call for details.
- High Current O/P, up to 55A<sup>1</sup>. Variable in steps of 1mA.
- Built in scan controller, for direct control of high current scanners.
- Pulsed DCPD as standard.
- Advanced triggering options, including peak, trough, and mid-point of load cycle waveform input.
- Variable DC offsets for the removal of standing voltages.
- Two channels as standard, reference and specimen.

The DCM-2 is a modern microprocessor based instrument for measuring crack depth in metals undergoing materials testing. Building on the success of the DCM-1 this new unit takes on board customer comments and suggestions, as shown in its impressive features list.

It utilises the pulsed direct current potential drop method (DCPD) which is an established technique covered by the ASTM 647 standard. The technique involves passing a constant current through the metal under test and measuring the resultant voltage drop that is created across the specimen. The presence of a growing defect will alter this voltage and by suitable calibration, a measure of the defect depth can be obtained.

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<sup>1</sup> Maximum output current dependent on model purchased.

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## DCM-2 SPECIFICATIONS

DCM-2 Model range.	
Option1	10A maximum current output.
Option2	55A maximum current output.

Specifications	
<b>Current O/P</b>	High stability (better than 0.01%) continuously variable current supply. Continuously variable up to 55A* maximum in 10mA increments. No minimum load required.
<b>Input ranges</b>	+/-4500 $\mu$ V with a resolution of 0.1 $\mu$ V. +/-450 $\mu$ V with a resolution of 0.01 $\mu$ V. +/-45 $\mu$ V with a resolution of 1nV.
<b>Offset</b>	+/- 4.5mV with respect to input signal. Adjustable in 1 $\mu$ V steps.
<b>Filters</b>	User definable filtering with 3 pre-defined settings.
<b>External sync</b>	Input voltage range, Max +/-20V Min +/-150mV Frequency range, Max 1kHz Min 0.1Hz Unit will trigger on peak, trough or mid-point of load cycle waveform input.
<b>Display</b>	Large 240*128 back-lit LCD displaying all user definable settings. As well as the X, Y and X/Y signals.
<b>Outputs</b>	Separate analogue O/P's of X, Y and X/Y signals. (BNC) Digital O/P of all set and displayed values. (Via RS-232)
<b>Connectors</b>	Current O/P: 2-way and 3-way Lemo (2B size) Signal I/P X and Y: 2-way Lemo (0B size) Analogue signal out X, Y & X/Y: BNC Ext sync: BNC RS232: 9-pin male D-type Scanner control: 25-way male D-type
<b>EMC and Safety</b>	Conforms to all relevant European directives.
<b>Power supply</b>	110-120V or 220-240v (Switch selectable) AC Mains, 50 or 60Hz. Mains input via earthed and fused IEC connector.
<b>Line Fuses</b>	Two 20mm anti surge 3Ampere fuse.
<b>Mechanical</b>	Frame made of aluminium extrusions and die-cast pieces, covers made of zinc-plated steel. All finished in a RAL epoxy powder coat. Optional 19" rack mountable handles.
<b>Dimensions / Weight</b>	450mm wide x 280mm deep x 130mm high. Net weight 12Kg.
<b>Operating Temperature</b>	0°-35°C main unit. LCD 10°-30°C. A 30 minutes warm up time is recommended.

\*Total current output is dependent on model purchased.

Available accessories and options on all models.	
<b>EXTERNAL PRE-AMP</b>	External Preamplifier. (Availability TBA)
<b>SM1-HC</b>	4 dual channel signal switching unit.
<b>SM2-HC</b>	4 channel current switching unit. (50amp compliant)
<b>19" rack mounting</b>	Rack mounting kit, please state when ordering.

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